CAMBRIDGE ADVANCED NATIONALS

OCR
Oxford Cambridge and RSA

Sample assessment material

LEVEL 3 ALTERNATIVE ACADEMIC QUALIFICATION
CAMBRIDGE ADVANCED NATIONAL IN

COMPUTING: APPLICATION DEVELOPMENT

Certificate H029
Extended Certificate H129

For first teaching in 2025

F160: Fundamentals of application development

Version 1.0 (June 2024)

ocr.org.uk/cambridge-advanced-nationals

Introduction

This is Sample Assessment Material (SAM) which has been produced for the OCR Level 3 Alternative Academic Qualification Cambridge Advanced National in Computing: Application Development (Certificate) and the OCR Level 3 Alternative Academic Qualification Cambridge Advanced National in Computing: Application Development (Extended Certificate).

The SAM is an example exam paper that we publish alongside a new specification to help illustrate its intended style and structure when a qualification is first launched. We wanted to share the story of our assessment approach with you so when you look through the paper you will find we have pointed out certain features and explained the decisions we have made.

Resources to help support in teaching different areas of content can be found on the OCR Level 3 Alternative Academic Qualification Cambridge Advanced Nationals in Computing: Application Development webpage under 'Planning and teaching '.

Our exam papers are developed with accessibility in mind. The Understanding the assessment guide tells you a little more about the principles and rationale underpinning our approach for the qualifications. The 'Command Words' are in both the Understanding the Assessment guide and the specification. These tell you what we mean by each command word and how students should approach the question and understand its demand.

Appendix B of the specification: Command Words, gives detail about what is expected of each command word that will be included in exams and mark schemes. You can include teaching around the expectations of these as part of your teaching.

You said, we did

During the development of these qualifications, we talked extensively with teachers, subject experts, higher education institutions and our senior assessment teams to influence their structure, content and assessment materials. We then shared our final materials with teachers to make sure that they met their needs.

You told us that you wanted the exam to take similar approaches to the exam in the current Cambridge National in Information Technology qualification. We have tried to do this by using a familiar tone and style of questioning.

You told us to keep this exam as short as possible but retain time to allow students to read the scenario and respond to questions. We have done this by reducing the number of available marks to 60 and setting this exams duration to 1 hour 15 minutes.

You told us that you wanted the exam to be based on a single context, that develops through the paper, so that is what we've done.

You told us that scenarios used in the exam should be accessible and easy for students to understand. We have done this by only using scenarios with things that students will have encountered.

Examples of comments received are placed against the relevant sections/questions.

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All students will sit the exam at the same time on the same day.

The time allowed is designed to give students approximately one minute per mark plus reading time.

If students require additional space to write their response(s), lined paper may be available at the end of the exam paper in a live exam. Remember the question number(s) **must** be clearly shown.

OCR
Oxford Cambridge and RSA

<<Date>> – <<Morning/Afternoon>>

Level 3 Alternative Academic Qualification Cambridge Advanced Nationals in Computing: Application Development

H029/H129 Unit F160: Fundamentals of application development

Sample Assessment Material (SAM)

Time allowed: 1 hour 15 minutes

No extra materials are needed.

Please write clearly in black ink. **Do not write in the barcodes.**

Centre number | Candidate number

First name(s)

Last name

Date of birth

INSTRUCTIONS

- Use black ink.
- Write your answer to each question in the space provided. You can use extra paper if you need to, but you must clearly show your candidate number, the centre number and the question numbers.
- In the live exam there might be lined pages at the end of the question paper for you to use if you need extra space. Remember, you must clearly show the question numbers.
- Answer **all** the questions.

INFORMATION

- The total mark for this paper is **60**.
- The marks for each question are shown in brackets **[ ]**.
- This document consists of **16** pages.

ADVICE

- Read each question carefully before you start your answer.

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Version 3.0 (September 2024)

Turn over

This unit is part of the Certificate and Extended Certificate qualifications.

This exam will always be set and marked by us. Exams will be available in January and June each year. Students can resit this unit and the best result will be used to calculate the certification result.

The exam will always have 60 marks. There are no sections in this exam.

This exam will have between nine and eleven mandatory questions. Question types include:

- Forced choice/controlled response questions. These are typically worth 1 to 4 marks.
- Short answer, closed response questions. These are typically worth 1 to 4 marks.
- Extended constructed response questions with points-based marks schemes. These are typically worth 1 to 4 marks.
- Extended constructed response questions with levels of response marks schemes. These are typically worth 6 or 9 marks.

These allow us to assess the following Performance Objectives:

- PO1 – Show knowledge and understanding
- PO2 – Apply knowledge and understanding
- PO3 – Analyse and evaluate knowledge, understanding and performance.

The questions will sample content from across all Topic Areas. At least one question (or sub-part) will relate to each Topic Area. Sub-content topic areas will be sampled across exam papers, over time.

1 Progress Walk is developing a smartphone health application to encourage adults to exercise by walking around their local town instead of driving. They will call their application ProgressWalk.

(a) Outline **two** characteristics of an application.

1 .....

.....

2 .....

.....

[2]

(b) Complete the table to match the correct application software category to each characteristic.

Write the name of **one** application software category in each of the **two** spaces in the table.

Application software categories:

Embedded

Freeware

Open

Shareware

Characteristics of application software categories	**Application software category**
Specialised for a particular device or machine that may not be considered as a computer.	
Developer retains the right to control, distribute modify and sell the software.	

[2]

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All questions in this exam will relate to a single scenario. The scenario will always be introduced at the start of this exam and will develop throughout.

When we ask a **complete the table** question, we may give a list of words in alphabetical order for students to choose from. Students choose their response(s) and write it/them in the space given.

The mark scheme will allow any other indicator of the word chosen, for example, an arrow pointing to it.

The number of marks for each question will always be given at the end of the question and will always be right aligned.

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The number of points needed will always be **emboldened**.

When a question assesses PO2 (apply knowledge and understanding) student responses **must** be applied to the scenario. The question wording will always indicate when a question assesses PO2.

The scenario will develop throughout this exam.

Appendix B in the **Specification** contains a glossary of **Command Words** which could be used in this exam. The glossary tells you what we mean by each command word.

Where a response must relate to a response given in another question, this will be clearly indicated.

3

(c)

(i) Identify **one** type of operating system that the ProgressWalk application could run on.

.....**[1]**

(ii) Explain **one** reason why the type of operating system you have chosen in **1(c)(i)** is suitable for the ProgressWalk application.

.....

.....**[2]**

2

(a) Players will score points when using the application. Players can exchange their points for healthy food and drink in local shops. Players will be able to compete and share their progress with their peers and monitor their weekly scores.

(i) Identify **one** application type that the ProgressWalk application could be included in.

.....**[1]**

(ii) Describe the purpose of the application type you have chosen in **2(a)(i)**.

.....

.....**[1]**

(iii) Explain **one** reason why the application type you have chosen in 2**(a)(i)** is appropriate for the ProgressWalk application.

.....

.....

.....

.....**[2]**

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Turn over

4

(b) The application will be a bespoke application

What is a **bespoke application**?

.....

.....**[1]**

3

(a) The ProgressWalk application will require players to set up an account linked to their email. Players will receive a confirmation email to verify the account and vouchers for signing up.

Once they are logged into their account on the application, players can set permissions and personalise their settings. The look of the application will need to follow the ProgressWalk house style but will allow players to add an avatar and change the colour of the menu.

The application will work on smart phones and allow players to input information using the camera and touchscreen keyboard. The application always requires access to the players' location so that that their movement can be tracked. Players will score points by uploading photos of themselves outside local buildings with the GPS coordinates attached.

Explain **two** functional requirements for the new application.

1 .....

.....

.....

.....

2 .....

....

.....

.....

[4]

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Key words will be in bold.

When a question assesses PO1 (show knowledge and understanding) student responses do **not** need to be applied to the scenario. The question wording will always indicate when a question assesses PO1.

Where context is given, this will be kept as short as possible and will only include information needed for the questions.

Where a question asks students to explain, they must show (PO1) or apply (PO2) their understanding. It is **not** enough to recall or apply knowledge alone.

In this question, students need to apply their understanding (PO2) by explaining **two** different functional requirements relevant to ProgressWalk's new application.

5

(b) When planning the ProgressWalk application, success criteria were defined.

Explain why success criteria are important.

.....

.....

.....

.....**[2]**

(c) Document analysis is one way of gathering a client's requirements.

State **one other** method of gathering a client's requirements.

.....**[1]**

4 When planning the project, client requirements must be considered.

Identify **one** suitable storage location for the data collected by the application.

.....**[1]**

5 At the start of development, a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis is completed.

(a) Outline **two** advantages of using SWOT analysis.

1 .....

.....

2 .....

.....

[2]

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Turn over

In this question, students need to show their understanding (PO1) by explaining, generically, why success criteria are important when developing an application

This **state** question assesses PO1 (show knowledge and understanding).

This **identify** question assesses PO2 (apply knowledge and understanding). Student responses **must** be applied to the scenario.

This question refers to using SWOT analysis generically, rather than specifically using SWOT analysis in the development of ProgressWalk's new application. This question assesses PO1 (show knowledge and understanding). Student responses will **not** need to be applied to the scenario.

(b) Explain **one** disadvantage of using SWOT analysis.

.....

.....

.....

.....**[2]**

6 The impact of legislation will need considering when planning the development of the ProgressWalk application.

Analyse how legislation will impact on the planning of the new smartphone application.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....**[6]**

This is an example of an **analyse** question. The question is assessing PO3 (analyse and evaluate knowledge, understanding and performance).

This exam will have one level of response (LOR) question worth 6 marks. This needs an extended written response. This question assesses PO3 (analyse and evaluate knowledge, understanding and performance) and responses need to include analysis. The question topic may be drawn from any relevant aspect of the unit's teaching content.

Extended response questions give students a real opportunity to show the extent of their knowledge and understanding of the subject.

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7

PLEASE TURN OVER FOR QUESTION 7

Where a question requires students to use a visual stimulus, we may leave a blank page and ask them to turn to the next page, so the stimuli is on view for all question parts.

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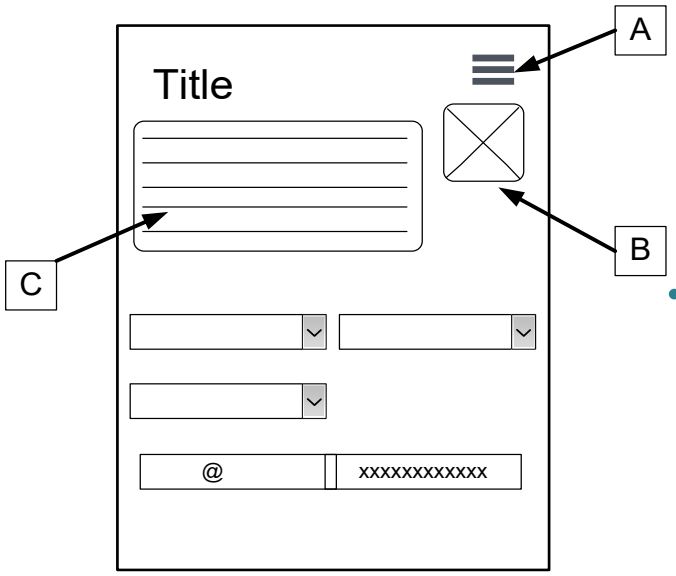
7 Players will score points by uploading photos of themselves outside local buildings. Players can add text to the images. The images can also be posted on players' personal social media accounts.

(a)
(i) This is a wireframe of the main screen human computer interface.



Complete the table using the letters **(A-C)** from the wireframe.

Wireframe component	**Letter**
Text box	
Image	
Menu	

[3]

When we ask a **complete the table** question, we may use letters to label components and conventions. Students choose their response(s) and write the letter in the space given.

The mark scheme will allow any other indicator of the word chosen, for example, an arrow pointing to it.

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This is an example of a 4 mark **explain** question. 2 marks are available for each way explained. 1 mark is for identifying a valid way and the 2nd mark for saying how it improves the effectiveness of the HCI. This question assesses PO2 (apply knowledge and understanding). Student responses **must** be applied to the scenario.

Short answer, closed response questions and extended constructed response questions test knowledge and understanding from across the unit content and allow students the opportunity to give free responses.

9

(ii) Explain **two** ways that the effectiveness of the human computer interface in **7(a)(i)** could be improved.

1 .....

.....

.....

.....

2 .....

.....

.....

..... **[4]**

There are a maximum of 2 marks awarded for each way explained.

(b) Describe **two** types of interaction that can be used with the human computer interface.

1 .....

.....

.....

.....

2 .....

.....

.....

..... **[4]**

This is an example of an extended constructed response question. Students will provide a shorter style extended response.

We will use extended constructed response questions to assess a range of performance objectives. They will enable students to show and/or apply knowledge and understanding.

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(c) Identify **two** ways error messages can help players use ProgressWalk application's human computer interface.

1 .....

.....

2 .....

..... **[2]**

8 Describe **two** characteristics of a smartphone that make it suitable for use with the ProgressWalk application.

1 .....

.....

.....

.....

2 .....

.....

.....

.....

[4]

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Where a question asks for a specific number of points, we will always put numbers or response headings against the lines to show where students should write each point of their response.

The number of lines given for a question indicate the approximate length of the response needed.

This is an example of a 4 mark **describe** question. 2 marks are available for each characteristic described. 2 mark is for identifying a valid characteristic. The 2nd mark is for saying how it is suitable for the application. This question assesses PO2 (apply knowledge and understanding). Student responses **must** be applied to the scenario.

Where an acronym is first used in the scenario or question, we will always expand it and give the acronym in brackets afterwards. Then only the acronym will be used.

9 The wireframe will be used by a User Interface Designer (UID) to gather feedback from ProgressWalk.

(a) Explain **one** way the UID can use verbal communication skills to gather feedback about the wireframe.

.....

.....

.....

.....**[2]**

(b) Describe **one** responsibility of a UID, other than gathering feedback.

.....

.....

.....

.....**[2]**

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This is an example of a **discuss** question. The question is assessing PO3 (analyse and evaluate knowledge, understanding and performance).

10 Discuss whether ProgressWalk should use the Rapid Throwaway Prototype model for the development of the application.

In your answers you must write about:

- any **advantages** to ProgressWalk
- any **disadvantages** to ProgressWalk
- whether you would recommend that ProgressWalk use the Rapid Throwaway Prototype model **and** your reasons.

[9]

This exam will have one level of response (LOR) question worth 9 marks. This needs an extended written response. This question will assess PO3 (analyse and evaluate knowledge, understanding and performance) and responses will need to include discussion. The question topic may be drawn from any relevant aspect of the unit's teaching content.

Extended response questions give students a real opportunity to show the extent of their knowledge and understanding of the subject.

END OF QUESTION PAPER

This indicates to students there are no more questions to answer.

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